

COCCUS LINNAEUS, 1758 AND PARTHENOLECANIUM
SULC, 1908 (INSECTA, HOMOPTERA, COCCIDAE):
PROPOSED DESIGNATION OF TYPE SPECIES UNDER THE
PLENARY POWERS. Z.N.(S.)2125

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A preliminary discussion of the problems discussed in this application has been given by Morrison & Morrison, 1966, and Danzig, 1967. These problems should be solved so as to stabilize the nomenclature of scale insects of great economic importance.

2. The genus *Coccus* was described by Linnaeus, 1758, p. 455, with 17 originally included species. The genus is the type of the family COCCIDAE Fallén, 1814, which was the first family of scale insects to be named. Three separate originally included species were designated as type species in the 19th century (for several invalid type designations, see Morrison & Morrison, 1966).

3. Curtis, 1838, p. 717, designated *Coccus cacti* Linnaeus, 1758, p. 457, as type species. Linnaeus's species is now placed in the genus *Protortonia* (Family MONOPHLEBIDAE Signoret, 1875). It is clear, however, that Curtis misidentified that species and that his figures and descriptive remarks refer to *Dactylopius coccus* O. Costa, 1835 (Family DACTYLOPIIDAE Signoret, 1875).

4. Westwood, 1840, p. 447, designated *Coccus ilicis* Linnaeus, 1758, p. 455 as type species. This species is currently referred to the genus *Kermes* (Family KERMESIDAE Signoret, 1875).

5. Cockerell, 1899, p. 260, designated *Coccus phalaridis* Linnaeus, 1758, p. 456, as type species. The name of this species is regarded as a *nomen dubium* by modern coccidologists.

6. None of these three type-species designations was accepted by contemporaries, and none is accepted today. Acceptance of any of them would bring about very undesirable changes in the names of genera, tribes, subfamilies and families of scale insects.

7. Fernald, 1902, p. 232; 1903, p. 167, designated *Coccus hesperidum* Linnaeus, 1758, p. 455, as type species of *Coccus*, wrongly believing that this designation had been made by Sulzer, 1761. Sulzer, however, had only cited the species as an example of *Coccus*. Although some aberrant points of view on the type species of *Coccus* appeared in the literature approximately up to 1930, Fernald's type designation has received general recognition and is followed by all modern coccidologists without exception. We think that it would be the general wish of coccidologists that Fernald's designation be validated under the plenary powers.

8. The genus *Lecanium* was described by Burmeister, 1835, p. 69. *Coccus hesperidum* Linnaeus, 1758 was designated as type species by Cockerell, 1893, p. 49. The implication that *Lecanium* is a junior objective synonym of *Coccus* is accepted by many modern authors, either directly (Borchsenius, 1957; de Lotto, 1965; Danzig, 1967; Williams, 1969), or indirectly (Schmutterer, 1952; Řeháček, 1960; Boratynsky, 1970; Koteja, 1974, etc.).

9. Another tendency is to retain the name *Lecanium*, following wide use in previous literature, for a broad generic concept mostly uniting the genera *Eulecanium* Cockerell, 1893 and *Parthenolecanium* Sulc, 1908 (Sanders, 1909; Sulc, 1932; Takahashi, 1955; Richards, 1958; Phillips, 1965; Kawecki, 1967; Williams & Kosztarab, 1972, etc.). The supporters of this view do not indicate a type species for *Lecanium* as understood in this sense. It is not fully clear what they prefer: validation of *Lecanium* instead of the large and economically important *Eulecanium*, or in place of the smaller *Parthenolecanium*. The only exception is the paper by Sanders, 1909, in which *Chermes persicae* Fabricius, 1776, now referred to *Parthenolecanium*, was designated as type species. This was one of the species originally included in *Lecanium* by Burmeister, but the designation is more recent than that made by Cockerell.

10. In order to ascertain which course of action is preferred by specialists, we wrote to eight coccidologists. Professor Z. Kawecki (Warsaw) took the view that *Lecanium* should be retained because, as Sanders stated in 1909, 'it is impossible to eliminate *Lecanium* from our Coccid nomenclature', but he did not say what species should be designated as type. Professor A. Balachowsky (Paris), Dr. K. Boratynski (London), Professor M. Kosztarab (Blacksburg), Dr. J. Koteja (Cracow), Mr. G. de Lotto (Pretoria), Dr. D. Miller (Beltsville) and Dr D. Williams (London) all held that *Lecanium* should be treated as a junior synonym of *Coccus*. Our own view is that to retain *Lecanium* now would introduce more confusion than stability in the nomenclature of scale insects, and we recommend its rejection.

11. The genus *Eulecanium* was described by Cockerell, 1893, p. 54, originally as a subgenus of *Lecanium*. The type species, by original designation, is *Coccus tiliae* Linnaeus, 1758, p. 456. The name is used in a broad sense to include *Parthenolecanium* as a synonym of *Lecanium* by those workers who prefer to retain this last name.

12. The genus *Pathenolecanium* was described by Šulc, 1908, p. 36. The type species, by original designation, is *Coccus coryli* Linnaeus, 1758, p. 456. The genus is differentiated from *Eulecanium* by a large number of significant characters

(Borchsenius, 1957; Danzig, 1967, and others). However, the identity of *C. coryli* is treated differently by different authors. Marchal, 1908, treated it as a senior synonym of *C. tiliae* Linnaeus, 1758, while Šulc, 1908, 1932, treated it as a senior synonym of *Lecanium corni* Bouché, 1844. The resulting instability of nomenclature can be seen from the following comparison (other examples are discussed by Kawecky, 1958a, 1958b):

	<i>Parthenolecanium</i>	<i>Eulecanium</i>
Marchal, 1908	<i>corni</i>	<i>coryli</i> (= <i>tiliae</i>) ¹
Šulc, 1908	<i>coryli</i>	<i>capreae</i> (= <i>tiliae</i>) ²
Šulc, 1932	<i>coryli</i> (= <i>corni</i>)	<i>tiliae</i>
Borchsenius, 1957	<i>corni</i>	<i>tiliae</i> ³
Richards, 1958	<i>coryli</i> (= <i>corni</i>)	<i>tiliae</i>
Kawecky, 1958a, 1958b	<i>corni</i>	<i>coryli</i> (= <i>tiliae</i>)
Řeháček, 1960	<i>corni</i>	<i>coryli</i>
Phillips, 1965	<i>coryli</i> (= <i>corni</i>)	not mentioned
Williams & Kosztarab, 1972	<i>corni</i>	not mentioned
Danzig, 1972	<i>corni</i>	<i>tiliae</i> (= <i>coryli</i>)

NOTES

1. In this paper Marchal as first reviser gave priority to *C. coryli* over *tiliae*.
2. *C. capreae* Linnaeus, 1767 is a junior synonym of *C. tiliae* Linnaeus, 1758.
3. *C. coryli* is regarded in this work as a 'nomen nudum' (in the sense of 'nomen dubium').

13. *Coccus coryli* and *C. tiliae* were established by Linnaeus in 1758 without descriptions, but with references to descriptions and figures given by Réaumur, 1738. It is well known that Réaumur's and Linnaeus's collections of scale insects cannot be found and may never have existed, because descriptions were prepared from living material. Šulc, 1932, concluded from a study of Réaumur's description and figures that *C. coryli* was certainly identical with *Parthenolecanium corni* but not with *Eulecanium tiliae*. Šulc's view was criticised by Kawecky, 1958a, 1958b. We agree with Kawecky that Réaumur's description and figures are not enough for an exact identification. Marchal and Kawecky's view on the identity of *C. coryli* with *C. tiliae* is accepted by the majority of coccidologists. On the other hand, *P. corni* is very common on *Corylus*, while *E. tiliae* is rare. This argues in support of Šulc's view and for restoring the nomenclature used by him. In contrast with *C. coryli*, the application of the names *C. tiliae* Linnaeus and *Lecanium corni* Bouché has been the same in all works.

14. As the name *Coccus coryli* has been a source of confusion for so long, and as the doubtful identity of the species is a

possible cause of endless discussion and instability of nomenclature, we ask for the suppression of that name under the plenary powers and for the designation of *Lecanium corni* Bouché as type species of *Parthenolecanium*.

15. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary powers
 - (a) to suppress the specific name *coryli* Linnaeus, 1758, as published in the binomen *Coccus coryli*, for the purposes of the Law of Priority but not for those of the Law of Homonymy;
 - (b) to set aside all designations of type species for the genus *Coccus* Linnaeus, 1758, made prior to the ruling here requested and having done so to designate *Coccus hesperidum* Linnaeus, 1758, to be the type species of that genus;
 - (c) to set aside all designations of type species for the genus *Parthenolecanium* Šulc, 1908, made prior to the ruling here requested and having done so to designate *Lecanium corni* Bouché to be the type species of that genus;
- (2) to place on the Official List of Generic Names in Zoology:
 - (a) *Coccus* Linnaeus, 1758 (gender: masculine), type species, by designation under the plenary powers in (1) (b) above, *Coccus hesperidum* Linnaeus, 1758;
 - (b) *Eulecanium* Cockerell, 1893 (gender: neuter), type species, by original designation, *Coccus tiliae* Linnaeus, 1758;
 - (c) *Parthenolecanium* Šulc, 1908 (gender: neuter), type species, by designation under the plenary powers in (1) (c) above, *Lecanium corni* Bouché, 1844;
- (3) to place on the Official List of Specific Names in Zoology:
 - (a) *hesperidum* Linnaeus, 1758, as published in the binomen *Coccus hesperidum* (specific name of type species of *Coccus* Linnaeus, 1758);
 - (b) *tiliae* Linnaeus, 1758, as published in the binomen *Coccus tiliae* (specific name of type species of *Eulecanium* Cockerell, 1893);
 - (c) *corni* Bouché, 1844, as published in the binomen *Lecanium corni* (specific name of type species of *Parthenolecanium* Šulc, 1908);
- (4) to place the generic name *Lecanium* Burmeister, 1835 (a

junior objective synonym of *Coccus* Linnaeus, 1758) on the Official Index of Rejected and Invalid Generic Names in Zoology;

- (5) to place the specific name *coryli* Linnaeus, 1758, as published in the binomen *Coccus coryli*, and as suppressed under the plenary powers in (1) (a) above, on the Official Index of Rejected and Invalid Specific Names in Zoology.

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